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EXAMINER HOFFMANN, JOHN M				
ART UNIT		PAPER NUMBER		
1791				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/796,099

Applicant(s)

STURM ET AL.

Examiner

John Hoffmann

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 15, 16, 18-35, 40 and 41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 15-16, 18-35, 40-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed 7/7/2009 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Figure 6 shows Di to be an external diameter. However [0006] and elsewhere indicates that Di is an internal diameter. Further more [00015] refers to "smooth wedge surface (7) Az". But proposed figure 2, shows Az/ 7 to be a phantom surface - there is no support for any surface value (Az) to encompass non-real surfaces. There is no support for Am being part of the process space as shown in figure 2: it shows Am as being completely devoid of free space.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 40-41 , 2-8, 15, 16, and 18-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Examiner could find no support for the newly claimed screw shank in particular one that is self-cleaning – either explicit or implicit. Further, since claim 40 no indicates that only the shanks are self-cleaning, the implication is that the other parts need not be self cleaning. Compared to original 1 which required that the extruder is "fully" self-cleaning. The specification does not reasonably convey that the inventor considered a partially self-cleaning extruder to invented. Moreover, that it is in particular the shanks that are self-cleaning.

There is no support for the limitation that each shank being arranged in single bore "holes". First, Examiner could find no support for the holes being "single bore". Second, it would appear that each shank is in exactly one hole - not plural. And to the degree that each is are in "holes", one would understand it to mean such can be considered to be a multi-bore hole.

There is no support for the limitation regarding "two flighted screw elements". Examiner could find no literal support for this language. Examiner understands that in the technology area there are "twin screw" extruders that have two screws (see for example 4540592) and then there are "twin flight" screws (i.e. a screw with two flights - a double helix, see 6234659 for instance.) Claim 1 as originally filed refers to "twin screw elements" – but there is no indication as to whether there are twin screws or twin

elements (e.g. flights) of a single screw. There is no discussion as to what these elements are.

Furthermore there is no support for "two flighted screw elements" in combination with the twin screw elements of claim 5.

As to implies support: there is none. Whereas claim 1 as originally filed refers to "twin screw elements", there is no indication that they are flighted. Rather, it would seem to examiner that the 'elements' themselves are the flights. As Examiner now understands the terminology:

There is no support for Di being the inner diameter at a screw base. [0006] indicates that it is an "internal" diameter. What is shown as Di in figure 2 is an external surface of the screw. Whereas it is "internal" to the extruder, Da is also internal to the extruder. It would seem that the only "internal" diameter of the screw would correspond to the innermost shaft (not labeled) onto which the helical part of the screw is set.

Claim 16: there is no support for the limitation that the shanks are tightly intermeshing.

There is no support for arranging the shanks in a "ring". As shown in figure 1, they are in a cylindrical arrangement. However, since this drawing was filed after the application is filed, one cannot claim anything that is derived from the newly added drawing.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 40-41, 2-8, 15, 16, and 18-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40: There is no antecedent basis for "the screws" at line 9. It is unclear if they are the same thing as the "screw shanks". It is unclear what the free volume is free from.

The claim is confusing because, as indicated by [00015], as presently amended and figure 2, Az (a smooth surface) is (or includes) a non-existent (phantom surface). It is unclear whether one should consider Az to be an actual surface only, or if it includes the non-real surface. Further, since the space between two adjacent shafts is an intersection between two volumes, it is unclear if one counts the volume twice, or once.

Claim 40 requires at least four screw shanks and holes; it further defines Am and Vf – on the basis of "the screws" and "the bore hole surfaces". However, the last two lines refers to a ratio (that includes Am and Vf) being "for" two elements. Thus it seems that Am and Vf are being defined as corresponding to that for two elements, not the at least 4 shanks and holes. One would not be able to reasonably tell how to interpret this the contradictory nature of these limitations.

Claim 5: the term "twin screw elements" is of confusing antecedent basis, it is unclear whether they are related to the elements of claim 40.

Claim 6 has an improper Markush group – or if it is not intended to be a Markush group - it is unclear what is meant. A proper Markush group recites: at least one member of the group consisting of...and.... Claim 6 does not indicate that the list of two

items is "consisting of" the members. Thus it is not a proper Markush group.

Alternatively: it is unclear if the group is "comprising" the two members.

Claim 18: there is no antecedent basis for "the core" and "the housing". For example it is unclear if the claim implies that claim 40 is limited to extruders with exactly one core and exactly one housing.

Claim 19-20: Also it is unclear what the control is separate from.

Claim 22: is unclear if this claim requires a step of processing. It is also unclear what is meant by "applying" - claim 40 already requires that the product is supplied to the extruder. It would seem that they are the same thing, and thus the claim appears to have improper double inclusion.

Claim 23: there is confusing antecedent basis for "a total period" claim 22 already refers to a total period.

Claim 16:

The language "tightly" is a "word of degree" which is imprecise unless a definition or guideline has been set forth in the specification or the term is otherwise well known in the art. See Seattle Box Co. v. Industrial Crating and Packing, Inc., 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed. Cir. 1984). However, there is no evidence in application (nor is Examiner aware of any evidence) that the words "tightly" have any art-recognized meaning. Nor is there any guidance or definition in the specification that would allow one of ordinary skill in the art to understand the meaning of the words "tightly".

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 40, 1-8 15, 16, 18-25, 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nosker 5951940, in view of O'Brien 4786181 and Sokolow 3998438 alone or in view of Applicant's prior art admission.

Claim 40: The supplying step is clearly met. As to the rotating step: Nosker teaches a multi-screw extruder (col. 2, line 10) but does not disclose rotating at least 4 of them individually driven in a common direction. Given Nosker teaches multiple screws: it would have been obvious to have 7 or more - depending upon how much material is desired. With at least 7 screws, at least 4 of them would be rotated in one direction. As to individually driven: it would have been obvious to have them individually driven at least by individual gears, belts or other torque transfer means. Such being a routine matter of engineering choice. In fact, it would seem that it would be impossible to not have them driven individually.

As to the smooth surface: NOsker does not disclose this. However Sokolow teaches such is standard (col. 5, lines 20-21) and O'Brien teaches the surface "must" be smooth" for effectively move the material. Thus it would have been obvious to have the surfaces smooth, because such is standard, and to effectively move the material.

As to the forming of a process space, such is inherently met: any extruder has a lateral area and a free volume.

As of the specific values of the last two lines, it is noted that such is very broad. The last two lines relate to a "portion" (which is not defined, disclosed, described or even mentioned in the specification, there is further mention of "two flighted screw elements". These elements are not indicated as being related in any way to the shanks

or screws of the rest of the claim, thus it is deemed that they need not be related.

Since Examiner interprets independent claim 40, by giving the terms thereof the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the specification, including the drawings, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. See, e.g., *In re Am. Acad. Of Sci. Tech. Ctr.*, 267 F.3d 1359, 1364, 70 USPQ2d 1 827, 1830 (Fed. Cir. 2004); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

As per the silence of the specification regarding the "portion" and "two flighted screw elements", the plain language of "wherein at least a portion of the process space has a ratio Am_3/Vf_2 between 1020 and 3050 for two flighted screw elements at a Da/Di ratio of 1.3 to 1.7" is "wherein a least a portion of any size, however small or however large, with or without any structure which delimits the portion, even completely arbitrary, has the ratio for any two flighted screw elements of any size, however small or however large, that may or may not be part of the extruder, at a Da/Di ratio of 1.3 to 1.7". This is inherently met, because one can find any number of arbitrary portions that meet the language. They would have the ratio regardless of any "element" that one uses. For example, by putting a small sheet metal screw into the condensate. In other words: stating the ratio is "for two flighted screw elements" does not specify in what way they are "for" the elements. The spacing could be to permit the elements to pass through.

Again, since applicant has not in any way stated that the "elements" are part of the extruder, it would be improper for examiner to arbitrarily force the claims to be more narrow than what is actually stated.

Claims 2-3: the claims refers to a torque density in terms of an "axis distance". However there is no requirement as to what the axis is, or the distance from what. Since there is no limitation as to what the distance could or could not be, it is deemed that it could read on any distance at any time. It is deemed that one would reasonably expect that the axle/axle would be very close to other structure – for example a bearing which holds it in place. The distance maybe in terms of microns. Clearly such would make the fraction very large.

Claim 4: it is deemed that the extruder can handle a sheet metal screw of and Da/Di assuming it is small enough to pass through the passages. Again, since applicant chose to claim the invention very broadly and NOT relate the elements to any of the feature of the apparatus, the Office does not have the authority to interpret the claims as being limited to the disclosed embodiments where the screws are part of the apparatus.

Claim 5 only relates to those situations for "twin screw elements" – in the case with 4 or more elements, there are not "twins" thus the limitation is not very relevant. It is assumed that since the claims do not require an explicit limitation that stipulates there are "twin screw elements" that applicant did not intend the scope to necessarily require twin screw elements.

Claim 6 : see col. 3 lines 7. – it is clear it is contaminated with HDPE.

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Claim 7-8, and 15 are clearly met.

Claim 16: the intermeshing is sufficiently tightly intermeshing.

Claim 18-20 relates to a core and a housing. However, since the claims do not require either, it is deemed to be a conditional statement: if there is both a core and housing, then the temperatures of each is controlled. However since Nosker lacks these, the limitation is met.

Claim 21: it would have been obvious to arrange the shanks in a ring or any other convenient arrangement.

From MPEP 2144.04

B. Changes in Shape

In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.).

Claim 22 refers to "during processing" from claim 6 it is clear that no processing is claimed – rather it is in reference to an intended processing. It is deemed that the Nosker material is capable of undergoing substantially any processing. The claims do not require a step of processing, thus the prior art need not have the processing limitations. This applies to claims 23-24 also.

Claim 25: it is interpreted to relate to a prior form - including a form that occurs far before the preparing of claim 1. In other words, it is a product-by-process type limitation. This is met because it does not limit the present material. In other words, by

looking at PET, there is no test which can tell whether it was ever at a particular density, for example 3 years prior. Thus a limitation that specifies a prior/initial state does not serve to define over the Nosker material – unless the claim clearly sets forth a step of using the initial material.

Claim 35: col. 4, lines 50-53.

Claim 41 is clearly met

Claims 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of O'Brien 4786181 and Sokolow 3998438 and optionally in further view of Applicant's prior art admission

Such would have been obvious for substantially the same reasons set forth above (where Nosker was the primary reference) as well as the prior Office action.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

It is argued that Nosker does not disclose self-cleaning screws that rotate in the same direction. Examiner previously pointed out how Nosker meets the self-cleaning limitation. This finding has not been disputed. Knockor's use of the term "multi-screw" immediately implies more than 2, and since there are only two possible rotation directions, once there are three screws, at least two have to be in the same direction.

Moreover, the claim doesn't require self-cleaning screws. Screws and "screw shanks" are two different things. Applicant's suggested claim interpretation ignores the tenet of claim construction that different words used in different used in different claims are presumed to have different meanings (which means that the "screw shanks" of claim 40 and the "screws" of claim 2 , cannot mean the same exact thing). *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72, 50 USPQ2d 1465 (Fed. Cir. 1999) (recognizing "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.").

As to the argument that Nosker does not disclose smooth surfaces: see the rejection which points out that smoothness is standard and obvious.

As to the argument relating to the ratio of diameter at the screw thread to the diameter of the screw base. As pointed out above, this is largely irrelevant – since applicant chose to not relate the "two flighted screw elements" to any other feature of the apparatus, it is presumed that applicant intended that it not be necessary for them to be related.

The above also applies to the substantially identical arguments regarding Wagner.

As to the argument the references do not teach the invention of claim 6. ON page 8 of the rejection it was pointed out that it is contaminated. This is undisputed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272-1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann
Primary Examiner
Art Unit 1791

/John Hoffmann/
Primary Examiner, Art Unit 1791